

*HABENARIA lævigata* (A. § 2. b.); glaberrima, lævigata, caule folioso, foliis lanceolatis canaliculatis acuminatis erectis imbricatis, bracteis foliaceis acuminatis subspiralibus floribus longioribus, labelli tripartiti laciniis filiformibus obtusis verruculosus ovario brevioribus intermediâ longiore, calcare filiformi longissimo.

Hab. ad *Cap. B. Spei*, inter *Basche* et *Omtata*, *Drége*.

---

XXXVIII.—*On the Occurrence of Squalus spinosus, Linn., on the Coast of Yorkshire.* By ARTHUR STRICKLAND, Esq.

ON the 11th of August 1838, a large fish was brought on shore at Burlington Quay, differing from any I had seen before, which had been caught that morning in a trawl net; its characters evidently bespoke it to belong to the shark tribe, but differing in many respects from any of those usually met with. Its whole length was  $7\frac{1}{2}$  feet; its girth in the largest part (just behind the pectoral fin) was 3 feet 8 inches; its whole surface was covered with a skin strikingly different from the rough file-like surface of most of the shark tribe, being very smooth and slimy; but the upper part of the back was studded over with sharp white spines hooking backwards, the largest not above  $\frac{1}{4}$  of an inch long, but varying greatly in size. Each spine was set upon a thin hard circular base about the size of a fourpenny piece. In some instances two, and in a few, three spines were clustered together, but were usually separate about one inch asunder. I could not perceive that they were placed in any order or pattern. These spines continued less abundantly down the sides, and seemed to cease altogether as they approached the belly, but were abundant upon all the fins. A distinct lateral line commenced above the insertion of the pectoral fin where it was slightly bent, and from thence ran in a straight line to the tail, where it bent upwards, and followed its course nearly to the extremity. The top of the head was quite flat, ending in a blunt round snout, the space between the eyes being somewhat more than that between the eye and the end of the nose; the eyes were large, and placed in the projecting edge that overhung the mouth: nearly half-way between the eye and the end of the nose were placed the

*HABENARIA lævigata* (A. § 2. b.) ; glaberrima, lævigata, caule folioso, foliis lanceolatis canaliculatis acuminatis erectis imbricatis, bracteis foliaceis acuminatis subspiralibus floribus longioribus, labelli tripartiti laciniis filiformibus obtusis verruculosus ovario brevioribus intermediâ longiore, calcare filiformi longissimo.

Hab. ad *Cap. B. Spei*, inter *Basche* et *Omtata*, *Drége*.

---

XXXVIII.—*On the Occurrence of Squalus spinosus, Linn., on the Coast of Yorkshire.* By ARTHUR STRICKLAND, Esq.

ON the 11th of August 1838, a large fish was brought on shore at Burlington Quay, differing from any I had seen before, which had been caught that morning in a trawl net ; its characters evidently bespoke it to belong to the shark tribe, but differing in many respects from any of those usually met with. Its whole length was  $7\frac{1}{2}$  feet ; its girth in the largest part (just behind the pectoral fin) was 3 feet 8 inches ; its whole surface was covered with a skin strikingly different from the rough file-like surface of most of the shark tribe, being very smooth and slimy ; but the upper part of the back was studded over with sharp white spines hooking backwards, the largest not above  $\frac{1}{4}$  of an inch long, but varying greatly in size. Each spine was set upon a thin hard circular base about the size of a fourpenny piece. In some instances two, and in a few, three spines were clustered together, but were usually separate about one inch asunder. I could not perceive that they were placed in any order or pattern. These spines continued less abundantly down the sides, and seemed to cease altogether as they approached the belly, but were abundant upon all the fins. A distinct lateral line commenced above the insertion of the pectoral fin where it was slightly bent, and from thence ran in a straight line to the tail, where it bent upwards, and followed its course nearly to the extremity. The top of the head was quite flat, ending in a blunt round snout, the space between the eyes being somewhat more than that between the eye and the end of the nose ; the eyes were large, and placed in the projecting edge that overhung the mouth : nearly half-way between the eye and the end of the nose were placed the

*HABENARIA lævigata* (A. § 2. b.) ; glaberrima, lævigata, caule folioso, foliis lanceolatis canaliculatis acuminatis erectis imbricatis, bracteis foliaceis acuminatis subspiralibus floribus longioribus, labelli tripartiti laciniis filiformibus obtusis verruculosus ovario brevioribus intermediâ longiore, calcare filiformi longissimo.

Hab. ad *Cap. B. Spei*, inter *Basche* et *Omtata*, *Drége*.

XXXVIII.—*On the Occurrence of Squalus spinosus, Linn., on the Coast of Yorkshire.* By ARTHUR STRICKLAND, Esq.

ON the 11th of August 1838, a large fish was brought on shore at Burlington Quay, differing from any I had seen before, which had been caught that morning in a trawl net ; its characters evidently bespoke it to belong to the shark tribe, but differing in many respects from any of those usually met with. Its whole length was  $7\frac{1}{2}$  feet ; its girth in the largest part (just behind the pectoral fin) was 3 feet 8 inches ; its whole surface was covered with a skin strikingly different from the rough file-like surface of most of the shark tribe, being very smooth and slimy ; but the upper part of the back was studded over with sharp white spines hooking backwards, the largest not above  $\frac{1}{4}$  of an inch long, but varying greatly in size. Each spine was set upon a thin hard circular base about the size of a fourpenny piece. In some instances two, and in a few, three spines were clustered together, but were usually separate about one inch asunder. I could not perceive that they were placed in any order or pattern. These spines continued less abundantly down the sides, and seemed to cease altogether as they approached the belly, but were abundant upon all the fins. A distinct lateral line commenced above the insertion of the pectoral fin where it was slightly bent, and from thence ran in a straight line to the tail, where it bent upwards, and followed its course nearly to the extremity. The top of the head was quite flat, ending in a blunt round snout, the space between the eyes being somewhat more than that between the eye and the end of the nose ; the eyes were large, and placed in the projecting edge that overhung the mouth : nearly half-way between the eye and the end of the nose were placed the

nostrils, about  $1\frac{1}{2}$  in extent the longest way; they were partially divided in the middle by two valves, the posterior one short and blunt, the anterior longer and pointed. The distance from the end of the nose to the mouth was 6 inches; the whole of this space between the nose and mouth was covered with numerous small open pores, probably the glands for the secretion of the mucus that covered the whole surface of the body. The mouth was furnished with three rows of teeth, with the commencement of a fourth row imperfectly formed. The outer or larger row was set upon an edge, but evidently movable, as some of these were doubled backwards; the rest were set behind these in lines, each tooth diminishing in size to the last. The teeth were thin and sharp, about half an inch broad, and a quarter of an inch high: the posterior edge was formed into two longish points, the upper one pointing partly upwards; the anterior side was formed into two much smaller points, pointing in different directions. There was no tongue, nor any appearance of one, the bottom of the mouth being smooth and hard. Seven inches from the mouth commenced the brachial openings, which were five in number, all placed in front of the pectoral fin; the first was 3 inches long, each increasing in size to the last, which was 6 inches. Immediately behind the centre of these commenced the pectoral fin, which was 11 inches in length, very thick and fleshy in substance, particularly at the base, the posterior edge thin and flexible; but as in all the fins except the tail, there were no perceptible fin rays or membrane, all being smooth and fleshy. This fin opened perfectly horizontally, or at right angles to the sides of the fish. Eighteen inches behind these commenced the ventral fins, which were equally thick and fleshy, 14 inches long and 11 inches broad, cut nearly square; between the posterior base of these fins was placed the vent. The space from that to the lower end of the tail was only 17 inches; from this point to the upper extremity of the tail was 23 inches, in one unbroken line, there being no distinct lobes of the tail as in most of the shark tribe. The edge of the tail was composed of indistinct fleshy rays covered with smooth membrane. A little behind a perpendicular line above the anterior base of the ventral fin was placed the first dorsal fin, which was 6 inches long, upon a base of the same length; 4 inches behind

nostrils, about  $1\frac{1}{2}$  in extent the longest way; they were partially divided in the middle by two valves, the posterior one short and blunt, the anterior longer and pointed. The distance from the end of the nose to the mouth was 6 inches; the whole of this space between the nose and mouth was covered with numerous small open pores, probably the glands for the secretion of the mucus that covered the whole surface of the body. The mouth was furnished with three rows of teeth, with the commencement of a fourth row imperfectly formed. The outer or larger row was set upon an edge, but evidently movable, as some of these were doubled backwards; the rest were set behind these in lines, each tooth diminishing in size to the last. The teeth were thin and sharp, about half an inch broad, and a quarter of an inch high: the posterior edge was formed into two longish points, the upper one pointing partly upwards; the anterior side was formed into two much smaller points, pointing in different directions. There was no tongue, nor any appearance of one, the bottom of the mouth being smooth and hard. Seven inches from the mouth commenced the brachial openings, which were five in number, all placed in front of the pectoral fin; the first was 3 inches long, each increasing in size to the last, which was 6 inches. Immediately behind the centre of these commenced the pectoral fin, which was 11 inches in length, very thick and fleshy in substance, particularly at the base, the posterior edge thin and flexible; but as in all the fins except the tail, there were no perceptible fin rays or membrane, all being smooth and fleshy. This fin opened perfectly horizontally, or at right angles to the sides of the fish. Eighteen inches behind these commenced the ventral fins, which were equally thick and fleshy, 14 inches long and 11 inches broad, cut nearly square; between the posterior base of these fins was placed the vent. The space from that to the lower end of the tail was only 17 inches; from this point to the upper extremity of the tail was 23 inches, in one unbroken line, there being no distinct lobes of the tail as in most of the shark tribe. The edge of the tail was composed of indistinct fleshy rays covered with smooth membrane. A little behind a perpendicular line above the anterior base of the ventral fin was placed the first dorsal fin, which was 6 inches long, upon a base of the same length; 4 inches behind

nostrils, about  $1\frac{1}{2}$  in extent the longest way; they were partially divided in the middle by two valves, the posterior one short and blunt, the anterior longer and pointed. The distance from the end of the nose to the mouth was 6 inches; the whole of this space between the nose and mouth was covered with numerous small open pores, probably the glands for the secretion of the mucus that covered the whole surface of the body. The mouth was furnished with three rows of teeth, with the commencement of a fourth row imperfectly formed. The outer or larger row was set upon an edge, but evidently movable, as some of these were doubled backwards; the rest were set behind these in lines, each tooth diminishing in size to the last. The teeth were thin and sharp, about half an inch broad, and a quarter of an inch high: the posterior edge was formed into two longish points, the upper one pointing partly upwards; the anterior side was formed into two much smaller points, pointing in different directions. There was no tongue, nor any appearance of one, the bottom of the mouth being smooth and hard. Seven inches from the mouth commenced the brachial openings, which were five in number, all placed in front of the pectoral fin; the first was 3 inches long, each increasing in size to the last, which was 6 inches. Immediately behind the centre of these commenced the pectoral fin, which was 11 inches in length, very thick and fleshy in substance, particularly at the base, the posterior edge thin and flexible; but as in all the fins except the tail, there were no perceptible fin rays or membrane, all being smooth and fleshy. This fin opened perfectly horizontally, or at right angles to the sides of the fish. Eighteen inches behind these commenced the ventral fins, which were equally thick and fleshy, 14 inches long and 11 inches broad, cut nearly square; between the posterior base of these fins was placed the vent. The space from that to the lower end of the tail was only 17 inches; from this point to the upper extremity of the tail was 23 inches, in one unbroken line, there being no distinct lobes of the tail as in most of the shark tribe. The edge of the tail was composed of indistinct fleshy rays covered with smooth membrane. A little behind a perpendicular line above the anterior base of the ventral fin was placed the first dorsal fin, which was 6 inches long, upon a base of the same length; 4 inches behind

this was placed a second fin, similar in all respects, except perhaps being cut a little more square at the end. From the front of the first of these fins to the end of the nose was a space of about 5 feet, without any other fin or projection except the small spines before mentioned. The colour of the fish was when I saw it, a few hours after it was caught, a nearly uniform reddish slate-colour, somewhat lighter on the lower parts; but it was described by the fisherman who caught it as having been more of a red cast, with blotches of a lighter colour, before it died.

The peculiar characters of this fish consist in the smooth slimy spinous skin (resembling in this respect some of the Ray tribe), the thick fleshy fins with the five brachial openings all placed in front of the pectoral fins, in having no central dorsal fin, no temporal orifices, no anal fins. In these respects it differs from any fish hitherto described as a British species. Nor does it agree with any I have been able to discover in any work I have yet had an opportunity of referring to.

ARTHUR STRICKLAND.

Eurlington Quay.

This species is the *Echinorhinus obesus* of Smith, who says in reference to it, "This shark is comparatively rare at the Cape of Good Hope. It is described by the fishermen as sluggish and unwieldy in its movements, and but seldom to be observed towards the surface of the water. When they obtain specimens it is generally at a time when they are fishing in deep water, and when the bait with which the hooks are armed is near to the bottom. In this respect it resembles the Scyllus or Ground Shark. If we were to regard only its internal organization we should be disposed to consider it as closely allied to that genus."—*Illustrations of the Zoology of South Africa*, by Andrew Smith, M.D., Part I. Pisces, pl. 1.

After an attentive examination of the particulars on this subject published in the Supplement to Mr. Yarrell's History of our British Fishes, Part II. p. 54, I have no doubt that all the specimens, and the various synonyms employed, refer but to one and the same species at different periods of its existence.—A. S.

this was placed a second fin, similar in all respects, except perhaps being cut a little more square at the end. From the front of the first of these fins to the end of the nose was a space of about 5 feet, without any other fin or projection except the small spines before mentioned. The colour of the fish was when I saw it, a few hours after it was caught, a nearly uniform reddish slate-colour, somewhat lighter on the lower parts; but it was described by the fisherman who caught it as having been more of a red cast, with blotches of a lighter colour, before it died.

The peculiar characters of this fish consist in the smooth slimy spinous skin (resembling in this respect some of the Ray tribe), the thick fleshy fins with the five brachial openings all placed in front of the pectoral fins, in having no central dorsal fin, no temporal orifices, no anal fins. In these respects it differs from any fish hitherto described as a British species. Nor does it agree with any I have been able to discover in any work I have yet had an opportunity of referring to.

ARTHUR STRICKLAND.

Eurlington Quay.

This species is the *Echinorhinus obesus* of Smith, who says in reference to it, "This shark is comparatively rare at the Cape of Good Hope. It is described by the fishermen as sluggish and unwieldy in its movements, and but seldom to be observed towards the surface of the water. When they obtain specimens it is generally at a time when they are fishing in deep water, and when the bait with which the hooks are armed is near to the bottom. In this respect it resembles the Scyllus or Ground Shark. If we were to regard only its internal organization we should be disposed to consider it as closely allied to that genus."—*Illustrations of the Zoology of South Africa*, by Andrew Smith, M.D., Part I. Pisces, pl. 1.

After an attentive examination of the particulars on this subject published in the Supplement to Mr. Yarrell's History of our British Fishes, Part II. p. 54, I have no doubt that all the specimens, and the various synonyms employed, refer but to one and the same species at different periods of its existence.—A. S.



this was placed a second fin, similar in all respects, except perhaps being cut a little more square at the end. From the front of the first of these fins to the end of the nose was a space of about 5 feet, without any other fin or projection except the small spines before mentioned. The colour of the fish was when I saw it, a few hours after it was caught, a nearly uniform reddish slate-colour, somewhat lighter on the lower parts; but it was described by the fisherman who caught it as having been more of a red cast, with blotches of a lighter colour, before it died.

The peculiar characters of this fish consist in the smooth slimy spinous skin (resembling in this respect some of the Ray tribe), the thick fleshy fins with the five brachial openings all placed in front of the pectoral fins, in having no central dorsal fin, no temporal orifices, no anal fins. In these respects it differs from any fish hitherto described as a British species. Nor does it agree with any I have been able to discover in any work I have yet had an opportunity of referring to.

ARTHUR STRICKLAND.

Eurlington Quay.

This species is the *Echinorhinus obesus* of Smith, who says in reference to it, "This shark is comparatively rare at the Cape of Good Hope. It is described by the fishermen as sluggish and unwieldy in its movements, and but seldom to be observed towards the surface of the water. When they obtain specimens it is generally at a time when they are fishing in deep water, and when the bait with which the hooks are armed is near to the bottom. In this respect it resembles the Scyllus or Ground Shark. If we were to regard only its internal organization we should be disposed to consider it as closely allied to that genus."—*Illustrations of the Zoology of South Africa*, by Andrew Smith, M.D., Part I. Pisces, pl. 1.

After an attentive examination of the particulars on this subject published in the Supplement to Mr. Yarrell's History of our British Fishes, Part II. p. 54, I have no doubt that all the specimens, and the various synonyms employed, refer but to one and the same species at different periods of its existence.—A. S.

*Note.*—Since the receipt of Mr. Arthur Strickland's communication, the second portion of a systematic arrangement and description of sharks by Drs. Müller and Henle, published at Berlin, has been received in this country, a reference to which appears to confirm the opinion given by our friend that the various published accounts of a spiny shark refer but to one species. The following are extracts from this valuable German work, p. 91 :—

Second Family. SCYMNI.

Second Genus. *Echinorhinus*, Blainv.—*Goniodus*, Agassiz.

Species 1. *Echinorhinus spinosus*, Bonap.

Le Bouclé, *Brouss.* p. 672. 21.

Sq. *spinosus*, *Linn. Gm.* 1500. 27.

Squale bouclé, *Lacep.* i. p. 30. tab. 3. f. 2. *Cop. Encyc.* p. 11. n. 22.

Sq. *spinosus*, *Bl. Schn.* 136.

Squale bouclé, *Risso. Ichth.* 42.

Scymnus *spinosus*, *Risso. Hist.* 136. *Cuv.* 393.

Leich bouclé, *Dict. des Sc. Nat.* pl. 28. f. 2.

*Echinorhinus spinosus*, *Bonap.* 13.

Sq. (*Echinorhinus*) *spinosus*, *Blainv. Faun. Franç.* p. 66.

*Goniodus*, *Agassiz*, vol. iii. tab. E. f. 13. (Teeth).

*Hab.* Mediterranean sea and the ocean.

Examples stated to have been seen by the authors of the work :—One in the Museum at Leyden ; one from the Cape by Dr. Smith.

The coloured figure of this shark sent us by Mr. Strickland, so closely resembles Dr. Smith's figure, as to make a second illustration unnecessary.—EDIT.

XXXIX.—*Horæ Zoologicæ.* By SIR W. JARDINE, Bart.

No. II. *The History and Habits of Crotophaga continued from page 171, by the Notes of Mr. Schomburgk on the Manners of the Birds in Guiana.*

IN a lately published number of the *Annals* we commenced a series of papers with the view of giving information as it occurred, and in the hope of calling attention and eliciting additional facts relative to the subjects which were treated of. It is highly satisfactory for us to think that our anticipations have

*Note.*—Since the receipt of Mr. Arthur Strickland's communication, the second portion of a systematic arrangement and description of sharks by Drs. Müller and Henle, published at Berlin, has been received in this country, a reference to which appears to confirm the opinion given by our friend that the various published accounts of a spiny shark refer but to one species. The following are extracts from this valuable German work, p. 91 :—

Second Family. SCYMNI.

Second Genus. *Echinorhinus*, Blainv.—*Goniodus*, Agassiz.

Species 1. *Echinorhinus spinosus*, Bonap.

Le Bouclé, *Brouss.* p. 672. 21.

Sq. *spinosus*, *Linn. Gm.* 1500. 27.

Squale bouclé, *Lacep.* i. p. 30. tab. 3. f. 2. *Cop. Encyc.* p. 11. n. 22.

Sq. *spinosus*, *Bl. Schn.* 136.

Squale bouclé, *Risso. Ichth.* 42.

Scymnus *spinosus*, *Risso. Hist.* 136. *Cuv.* 393.

Leich bouclé, *Dict. des Sc. Nat.* pl. 28. f. 2.

*Echinorhinus spinosus*, *Bonap.* 13.

Sq. (*Echinorhinus*) *spinosus*, *Blainv. Faun. Franç.* p. 66.

*Goniodus*, *Agassiz*, vol. iii. tab. E. f. 13. (Teeth).

*Hab.* Mediterranean sea and the ocean.

Examples stated to have been seen by the authors of the work :—One in the Museum at Leyden ; one from the Cape by Dr. Smith.

The coloured figure of this shark sent us by Mr. Strickland, so closely resembles Dr. Smith's figure, as to make a second illustration unnecessary.—EDIT.

XXXIX.—*Horæ Zoologicæ.* By SIR W. JARDINE, Bart.

No. II. *The History and Habits of Crotophaga continued from page 171, by the Notes of Mr. Schomburgk on the Manners of the Birds in Guiana.*

IN a lately published number of the *Annals* we commenced a series of papers with the view of giving information as it occurred, and in the hope of calling attention and eliciting additional facts relative to the subjects which were treated of. It is highly satisfactory for us to think that our anticipations have

*Note.*—Since the receipt of Mr. Arthur Strickland's communication, the second portion of a systematic arrangement and description of sharks by Drs. Müller and Henle, published at Berlin, has been received in this country, a reference to which appears to confirm the opinion given by our friend that the various published accounts of a spiny shark refer but to one species. The following are extracts from this valuable German work, p. 91 :—

Second Family. SCYMNI.

Second Genus. *Echinorhinus*, Blainv.—*Goniodus*, Agassiz.

Species 1. *Echinorhinus spinosus*, Bonap.

Le Bouclé, *Brouss.* p. 672. 21.

Sq. *spinosus*, *Linn. Gm.* 1500. 27.

Squale bouclé, *Lacep.* i. p. 30. tab. 3. f. 2. *Cop. Encyc.* p. 11. n. 22.

Sq. *spinosus*, *Bl. Schn.* 136.

Squale bouclé, *Risso. Ichth.* 42.

*Scymnus spinosus*, *Risso. Hist.* 136. *Cuv.* 393.

Leich bouclé, *Dict. des Sc. Nat.* pl. 28. f. 2.

*Echinorhinus spinosus*, *Bonap.* 13.

Sq. (*Echinorhinus*) *spinosus*, *Blainv. Faun. Franç.* p. 66.

*Goniodus*, *Agassiz*, vol. iii. tab. E. f. 13. (Teeth).

*Hab.* Mediterranean sea and the ocean.

Examples stated to have been seen by the authors of the work :—One in the Museum at Leyden ; one from the Cape by Dr. Smith.

The coloured figure of this shark sent us by Mr. Strickland, so closely resembles Dr. Smith's figure, as to make a second illustration unnecessary.—EDIT.

XXXIX.—*Horæ Zoologicæ.* By SIR W. JARDINE, Bart.

No. II. *The History and Habits of Crotophaga continued from page 171, by the Notes of Mr. Schomburgk on the Manners of the Birds in Guiana.*

IN a lately published number of the *Annals* we commenced a series of papers with the view of giving information as it occurred, and in the hope of calling attention and eliciting additional facts relative to the subjects which were treated of. It is highly satisfactory for us to think that our anticipations have